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Dr. B. H. BEANE, Distinguished Paleontologist.

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October Issue, 1959

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Earth Science

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Editor's Memo Pad

NO INNER RESOURCES: Boredom, it appears, is becoming one of man's greatest enemies. Oldsters with too much leisure time and not enough imagination or creative ability are in danger of becoming afflicted with behavior problems of various kinds, and degrees of seriousness. This is definitely more true of the male member of the species than the female, as most women have definitely more busy work around the domicile to keep both their hands and their minds occupied.

Age is often an aggravating factor, because our senior citizens tend to do much less than during their more productive years. This is only natural, and a product or penalty of the experience of growing old which faces every one of us. In some instances when retirement has been forced upon a man, he actually has to keep his wits about him to remain both physically and mentally alert.

Inactivity itself is a deteriorating factor, and the ill effects become rapidly accumulative through each succeeding year, so the time arrives sooner or later when one can no longer get much satisfaction or enjoyment out of living. It takes a highly intellectual individual, it is said, to enjoy pure leisure,—therefore most of us, who perhaps do not fall entirely within this category had better depend upon doing or working at something worthwhile, that we can really enjoy doing, if we are to grow old gracefully.

One of the lessons one can learn in life is how to use our spare time wisely. This brings us back to the problem of preparing or planning for old age, earlier in life,—even during school days, when most young folks begin to take definite interest in certain things, be it art, music, history, or even fishing or golf. What are the real attributes of a worthwhile and lasting hobby anyway? They are many, and we dare say that no hobby we can suggest has as many helpful advantages as rock-hounding. They must be so obvious to everyone that we need mention only a few of them.

In the first place one may work at it only incidentally, or spend as much time on it as he can spare. He can collect with little or no monetary expense, or invest a small fortune in specimens if he desires. If he is mechanically inclined, he can work with his hands and develop as much skill as his ability will permit, or he can study the physical and chemical properties of his minerals and thus develop an educated mind. Or if he be of aesthetic temperament he can enjoy them simply for their sheer beauty. If he wishes to travel widely he can go to the ends of the earth in search of specimens, and the exercise and experience he

will gain in being out of doors will be exceedingly worthwhile, and at the same time help keep him physically fit. And furthermore, no hobby like rockhounding gives one a keener appreciation of the wonders of the natural universe, or of the Supreme Creator who has made it all possible.

* * * * *

ANCIENT BURIAL GROUND: A team of archeologists dug into a gravel pit near the town of Half Day some forty miles northwest of Chicago, following the lead of a workman operating a mechanical scraper, who had turned up a reddish object which looked like a human bone. As a result they made what James R. Getz, chairman of the advisory committee of the Illinois Archeological Survey said was, "perhaps the most significant discovery of ancient human culture ever made in the Chicago area."

The pit belonging to Doesch Brothers was located about 500 feet west of the Des Plaines River, near the intersection of U.S. Highway No. 45 and Illinois Route 22, and complete exploration revealed the presence of at least six skeletons of persons who had lived and were buried in this area from 3,000 to 8,000 years ago. Of great importance was the fact that they lived in an epoch of human history that the scientists call the red ochre culture dated about 6,000 B.C.

The skeletons—burials as they are called in archeological terminology—were found in reddish earth about 2½ feet below the layer of gravel. Each of the skeletons was in a flexed position, each lying on the side with the knees drawn up to the chest. The position of the skeletons and the reddish brown earth supplies the clues that the remains had been interred during the period of the red ochre culture, when it was a religious or ceremonial practice to cover the remains with red ochre.

Of particular interest to rockhounds is the fact that with one of the skeletons was a pair of ornaments called gorgets, worn as a sort of a necklace by stylishly dressed women in pre-historic times, and two small copper beads. Whatever else she may have worn is purely conjectural, but we may be sure that then as now ornamental jewelry must have been an item of special consideration.

* * * * *

FABULOUS IF TRUE: Once in a blue moon some fortunate individual turns up with a "find" of a valuable diamond in the raw, at the only diamond mine worthy of the name located in the United States, this being the well known "crater of diamonds" near Mur-

freeseboro, Arkansas, some 50 miles beyond Hot Springs through the Ouachita Mountains. Mainly a tourist attraction where rockhounds, and others, may look for diamonds for a daily fee, with the very remote possibility of finding even a small one, although occasionally some lucky individual does really come up with a real "find."

This year's lucky person was Mrs. Callie Jameson of Mamou, La., who early in July found a 3.65 carat gem valued at approximately \$3,500. With her at the time was her sister, Mrs. Margaret Hasslock, of San Antonio, Texas, and they decided to name the stone the "Faubus Diamond" because they were great admirers of the Arkansas governor.

This is the only spot in North America where genuine diamonds are to be found in their volcanic matrix. More than 100,000 diamonds, most of them very small, too small in fact to be employed as gem stones, have been found in this crater. Untold millions of diamonds, it is conjectured yet remain untouched in this huge crater area.

In 1956, Mrs. A. L. Parker, of Dallas, Texas, found a single stone, now known as the "Star of Arkansas," which has been valued at \$75,000.00—a sizable gem, as diamonds go, from any place in the world. There are also many other precious stones to be found in the vicinity, such as amethyst, garnet, agate and other semi-precious gems. Hunting diamonds at "Diamond Crater" is an experience not soon to be forgotten.

LETTERS:

OUR SUGGESTION BRINGS RESULTS: In our August issue we suggested that a subscription to EARTH SCIENCE as a door prize, or as an appreciation gift to some special speaker would be a nice gesture on the part of your Society. From Muriel Colburn, Corresponding Secretary of the Colorado Mineral Society, we have received the following letter of interest:—

Gentlemen:—

"Enclosed please find check for \$4.00 for two subscriptions to EARTH SCIENCE Magazine to be sent to the following:

Ronald Schatz, 875 Holly Street, Denver 20, Colorado. Fred Hammill, 3290 Leyden Street, Denver 7, Colorado.

These boys won a contest and had their choice of magazines to be paid for by our Society. Please send them the magazine for one year. Thank you.

(Signed) Muriel Colburn, Secretary.

Reply:—We thank you Muriel for your thoughtfulness. W.H.A.

Hamilton, Ontario

Dear Sirs:—

This is one notice I won't let slip by,—your notice of my subscription expiration. Your magazine is by far the best of its kind on the market.

Its articles are informative and of lasting interest. Even its advertisements, while necessary for the continuance of the magazine, are in my opinion essential to the fulfillment of its purpose.

I cannot be too hearty with my approbation, and too lavish with my praise of it. Keep up the excellent work.

Yours truly,

Eugene Gryski.

* * * *

CORRECTION: Yes! We certainly do want to keep history straight. Thank you very much, Mrs. Butterfield.

Westminster, Mass.

Dear Dr. Wilson:

I don't know whether anyone else has written you about the following or not, but after reading the August issue of EARTH SCIENCE I felt I should write you about what I think is an error in one of the articles under the "Editor's Memo Pad."

The article on "Hazeltonite" called a *cesium* mineral, I think should be "Hazlinitite" a *cesium* mineral.

Following are a few paragraphs from the Boston Herald of April 13, 1959 in regard to the recently discovered Maine mineral.

"Portland, Me.—Discovery of what may be the world's largest deposit of virtually pure cesium ore—a comparatively rare mineral used in nuclear research—was claimed Sunday by the T. C. Mining Co. of West Paris.

Dr. Thompson said the ore containing the cesium had for some time been considered a nuisance in the company's mica operations. He said his wife, and the wife of Stanley I. Perham of West Paris, who is associated with Dr. Thompson in the mining firm, had discovered the ore.

They insisted that the company's laboratory test the "nuisance" element. Its weight was discovered to be "far out of line in terms of specific gravity." From that beginning it was determined, after considerable research, that the mineral was cesium.

As a result the new ore containing the cesium was named "hazlinitite" after the women's first names—Hazel and Lillian."

There are some very interesting and informative articles in the August issue which I very much enjoyed.

Sincerely,

Mrs. Vance Butterfield.

ATTENTION PROGRAM CHAIRMEN:—

The release of four exceptionally fine films sponsored by the International Nickel Company, which are now available to Technical Groups and Scientific Societies has recently been announced by Rothacker, Inc., 729 Seventh Avenue, New York 19, N.Y., through which firm complimentary reservations for showing same may be made upon request.

Possibly the most desirable one of the four for an Earth Science Club program would be "*Mining for Nickel,—Deep within the Earth,*" which shows the complete story of nickel mining, giving a clear picture of the wondrous complicated underground working of a great mining operation. This is in New Eastman Color, 16 mm sound, running time 45 minutes.

(2) "*Refining Nickel,*" (3) "*Refining Copper,*" and (4) "*Milling and Smelting of the Sudbury Ores,*" are the subjects of the other films which are of a more technical nature less suited to the whims of the average rockhound. They are, however, all fine films and we do not hesitate to recommend any or all of them should occasion demand.

* * * *

FOREVER BLOWING BUBBLES: If a new revolutionary method of extracting minerals from solutions, which may provide a low cost system of recovering metals from sea-water (oceans) proves successful, future races of people living on this metal poor planet may actually be "forever blowing bubbles."

While the process, invented by Prof. Felix Sebba of the Witwatersrand University chemistry department, Johannesburg, South Africa, has not reached the commercial stage it holds sufficient promise that Armour & Company have secured the rights to the process and have applied for basic patents in the United States and 31 other countries.

Uses Soap and Bubbles. The professor calls his invention "the Soap and Bubbles method" and said it was developed after two years' experimenting "with \$8.70 worth of equipment."

Sebba found that certain soaps, when added to a mineral-containing solution, would chase the mineral to the surface after bubbles were blown through the water. He demonstrated this with a cobalt solution to which he added potassium laurate. Bubbles blown through the water immediately produced a green froth, containing the cobalt.

Calculates Sea Potential. "I have calculated it should be possible by this method to extract 600 tons of aluminum a day from the sea, or 2 tons of uranium, or 240 ounces of gold," Sebba said.

It is known that there is sufficient gold in solution in the ocean waters to pave the

entire United States, or to form a canopy over the whole world,—at least \$93,000,000 worth, it is said, in every cubic mile of sea-water, and in the ocean alone there exists some 325,000,000 cubic miles of water.

"I visualize a small sea area being fenced off, with pipes laid on the ocean bed for introducing bubbles into the water after adding the required soaps. The minerals could then be collected on the surface.

"Which mineral is chased to the surface would depend on the kind of soap." And why we might ask would Armour & Company whose principal business is meat packing be interested in such a remote possibility,—well their far looking sales management might be looking for a market for soap which is one of their important by-products.

* * * *

ANNOUNCEMENT: In our December issue we expect to be able to make a very special announcement concerning the incorporation of a new Art Lapidary section in our magazine which should be of great interest to so many of our readers who are interested in doing lapidary work, and who have sensed the absence of such material from our pages in the past.

* * * *

OUR AUTHORS:—Curt Harnack, author of "Treasures from an Ancient Sea," a free lance writer for "The Iowan" magazine, in which the article was originally published, has done a marvelous job in portraying the life and character of B. H. Beane, a LeGrand (Iowa) farmer whose interest in fossils has led him to much "scientific acclaim." Dr. Beane, who has exhibited his choice fossil specimens at so many of our Midwest Conventions is well known to hundreds of Midwest rockhounds, and we take great pleasure in bringing this splendid article to our readers, by permission of the Editors of "The Iowan," no doubt the finest magazine of its type published in America today.

* * * *

OUR COVER PHOTO: Dr. B. H. Beane, distinguished Paleontologist, as you may read in our feature article, not only is widely known in this country, but also abroad, as well. Being a man of great patience and perseverance, he has developed a skill and artistry in etching delicate fossil traceries out of solid rock, such as has seldom if ever been equaled by any other individual. His technic is so fine and delicate as to be almost unbelievable, and all who have been privileged to see his work marvel at its excellence.

Midwest Club News

Bernice Rexin, Club Editor

3934 N. Sherman Blvd.
Milwaukee 16, Wis.

KALAMAZOO GEOLOGICAL AND MINERAL SOCIETY made a field trip on Aug. 9 to Clay Center and Woodville, Ohio to collect Fluorescent Fluorite, calcite, barite and celestite. At a regular meeting, prior to the trip, Spencer Van Valkenburgh spoke to the group on "Field Trips and Rock Collecting Manners." He stressed the following points: don't go around dynamite areas; don't go near machinery; don't work over or under anyone; don't handle other's specimens without permission; don't be a litter-bug; and, especially, don't be a rock-hog and try to strip a quarry.

At each of its meetings, the society gives a year's subscription to EARTH SCIENCE magazine as a door prize—Really six nice prizes in one.

RIB MOUNTAIN GEM AND MINERAL SOCIETY'S first show was a great success. The many displays of polished spheres, fluorescent minerals, radioactive materials, fossils, Indian artifacts and jewelry were very popular with the public and the show was attended by hundreds of persons from north central Wisconsin.

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY collected some good fluorite, sphalerite and calcite crystals during a recent visit to the mine dumps around Cave-In-Rock, Illinois. Most of the material was fluorescent and one member found some beautiful blue barite.

NEBRASKA MINERAL AND GEM CLUB recently featured agate on its program. Lake Superior agate and Fairburn agate were discussed by Dick Hedges of Lincoln, Nebr. and Russell Kent of Omaha, Nebr. talked about Montana agate. Some very interesting agate specimens were displayed. Polishing methods for agate and other materials were explained by Bertha Minardi.

GRAND RAPIDS MINERAL SOCIETY on August 12 introduced a novel plan for mapping mineral and fossil collecting areas. Each member was asked to bring a map of Michigan (easily obtained from service stations) and a pencil to the meeting. Experienced collectors took turns giving the locations of good collecting areas and describing the type of material found there, and the members marked these sites on their maps.

COLUMBUS ROCK AND MINERAL SOCIETY, organized last spring, made its first field trip to Flint Ridge, Ohio and returned with some good jasper, quartz and flint. The society recently joined the Midwest Federation.

CENTRAL IOWA MINERAL SOCIETY has moved the famous mineral collection of the late Halver R. Straight from his home in Adel, Iowa to Drake University where it will be permanently displayed. To finance the moving and housing of the collection, the society raised the money by gem and mineral auctions and donations by its members. Members who purchased display cabinets, costing \$125.00 each, for the collection are given recognition by a plaque, naming the donor, of each cabinet.

MICHIGAN GEM AND MINERAL SOCIETY stresses safety and courtesy on all its field trips and is therefore welcome to all collecting areas that are open to the public. Each month, as a part of this safety program, the society's publication, *Michigan Gem News*, features an article, by a physician member, Dr. Frank Pray, on first aid for injuries that are likely to be encountered on field trips.

MESABI ROCK AND MINERAL CLUB recently visited the dumps of mining companies around Virginia, Minn. to collect agates and algae jasper.

On July 15, the group heard Richard Lake give an interesting talk on Goethite, martite, pyrite, marcasite, rhodochrosite and lignite.

INDIANA GEOLOGY AND GEM SOCIETY recently heard Ray Fiscus give an informative talk on "Indian Tools." By displaying an Indian tool and a comparable modern tool, Mr. Fiscus demonstrated the similarity between a stone ax and a hammer; a flint knife and a metal one; and a sharpened turkey bone awl and a steel awl. Round, hollow-centered stones, he said, were used by the Indians as sinkers for their fish nets. Most of the arrow heads that he displayed were made of native chert, but some were made of quartz and obsidian. The use of the latter materials, he said, showed that there was considerable trading among the tribes.

EARTH SCIENCE CLUB OF NORTHERN ILLINOIS made a field trip on July 11 to Buffalo Rock State Park, near Ottawa, Ill. to collect marcasite and selenite crystals, and on Aug. 8-9 visited the Tri-State Zinc and Eagle-Picher mines at Galena, Ill. for calcite, galena, marcasite and sphalerite.

(Continued on page 167)

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Idaho star garnets—the finest available at new low prices. Tumbled stones, each showing stars; 18¢/gram, \$5.00/oz. Also, 11¢/gram, \$3.00/oz. Stones average 1 to 5 per oz. 1 gram = 5 cts.; 1 oz. = 28.35 grams. Add Federal tax, 10%.

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Treasures from An Ancient Sea Backyard discoveries have lead to scientific acclaim

By CURT HARNACK

FOR MORE than sixty years B. H. Beane, whose farm adjoins the Le Grand limestone quarry, has been collecting fossils of sea lilies, starfish, and other echinoderms which flourished in the warm, shallow seas that covered Iowa three hundred million years ago. Now, at past eighty, Beane is a leading authority on life in Iowa during the mid-Mississippian period of the Paleozoic era. He has discovered eleven new species of sea animals and supplied half the university museums of the nation with fossil specimens, yet he has had no special training in paleontology. "It just began as a hobby," Beane says.

Slabs of limestone fill the rooms of his house in Le Grand, spill out into the yard, and repose against the trunks of trees. After Beane has properly cleaned a fossil specimen—and usually there are dozens of sea animals on the face of one chunk of limestone—the ancient sea lilies and their cousins resemble stone flowers in bas-relief. But the fossil sea lilies were not plants at all; they were animals, the ancestors of the living crinoids of today. Because of the completeness of the fossils, with each detail of the body preserved in stone, the finds at the Le Grand quarry have had great scientific importance.



Stone "sea lilies" (crinoids) etched by the Master Workman.

The first major fossil discovery in the Le Grand area occurred in 1858 when James Hall, New York State Geologist, found specimens of sea lilies or crinoids. Because crinoids were extremely rare, scientists hunting for fossils arrived at Le Grand throughout the latter part of the 19th century; but the largest finds of all were to be made by the farm boy who pestered the university paleontologists with questions about their work.

B. H. Beane recalls that "as a lad going up through the quarry to the old swimming hole, I met scientists hunting crinoids for their collections. And that inspired me to learn. I've been at it ever since." Beane attended William Penn College and now holds an honorary Doctor of Science degree from his alma mater, but he was not a science specialist; his occupation was farming.

The Le Grand quarry, a major source of oolitic limestone, produced the stones for the Des Moines Historical Building, Marshall county courthouse, and many other Iowa buildings. In the early days, quarrying was done by hand, and the chances of preserving fossils embedded in the rock were greater than after the advent of machinery. Beane studied about sixty-five feet of the face of the quarry and examined shattered rocks, looking for traces.

The first clue in discovering fossil sea lilies was frequently an exposed cross-section of the stem. Perhaps smaller than a pea, this fossilized disc was part of the skeletal system of the prehistoric animal. Beane particularly studied the area near the location of the big discoveries made by scientists in the late 1890's—the south part of the quarry, about twenty feet from the surface. Beane estimates that from 1900 to 1931 he examined a thousand tons of loose rock and kept a close watch on the changing face of the quarry. Perhaps one rock in 500 might have fossil content, and of these, only one or two per cent might have interesting specimens.

Finally in 1931, Beane made his first important discovery when a blast revealed a bed of crinoids only about 100 feet from the excavations of thirty years earlier. This colony was about fifteen feet in diameter, and the specimens Beane unearthed turned out to be amazingly well preserved. In 1933, Beane again came across a large group of fossils, and working carefully with quarry employees who drilled and blasted away the twenty-five feet of rock above it, he found specimens that took him four years to prepare for exhibit. By that time his collection of fossil echinoderms was one of the most important in the nation.

The term echinoderm applies to sea urchins, starfish, sand dollars, and sea lilies (crinoids), for all of them have an external skeletal structure made up of tiny, limy plates connected by soft tissue. In the evolutionary system, echinoderms come after jellyfish and related sea animals but before the development of fish. The Le Grand specimens were alive 200 to 300 million years ago, when Iowa was under a shallow inland ocean and the climate was balmy.

A sea lily may be crudely described as a starfish with a stem extending from its back which can be anchored to the bottom. The ancient crinoids lived in beds or colonies; they were brilliantly colored and waved petal-shaped arms in search of food. The animal was encased in a mail-like skeleton.

Dr. A. K. Miller, chairman of the geology department at the State University, says that "Iowa has long been famous for fossil crinoids, especially because of the voluminous studies a generation ago by Charles Wachsmuth and Frank Springer in the vicinity of Burlington. Now Dr. Beane and Dr. L. R. Lauden (of the University of Wisconsin) have been carrying on the work at other localities and seeing to it that we retain our preeminent place. Dr. Beane's specimens are truly remarkable, and his



Starfish—"Beane's most exciting discovery."

collections are varied and extensive."

Prior to the Iowa crinoid discoveries, it was very rare to find a fossil sea lily because the soft tissues holding the skeleton together quickly disintegrated at death, scattering the remains of the animal into tiny fragments which eventually became layers of rock. At Le Grand, apparently the crinoids were rapidly buried under a thin covering of silt that cut off oxygen and any chance for bacterial attack; the soft tissues of the sea lilies became deposits of calcium and magnesium; down to the most minute details, they turned into stone and therefore lasted 300 million years.

Beane's most exciting discovery was a slab of rock with 183 fossilized starfish and other echinoderms. These ancient starfish, so rare that before Beane's discovery it was almost impossible for museums to obtain a starfish anywhere, closely resemble contemporary starfish. "There's been as little change among them as in anything," Beane says.

One day in 1930, the quarry office telephoned Beane that some fossil evi-

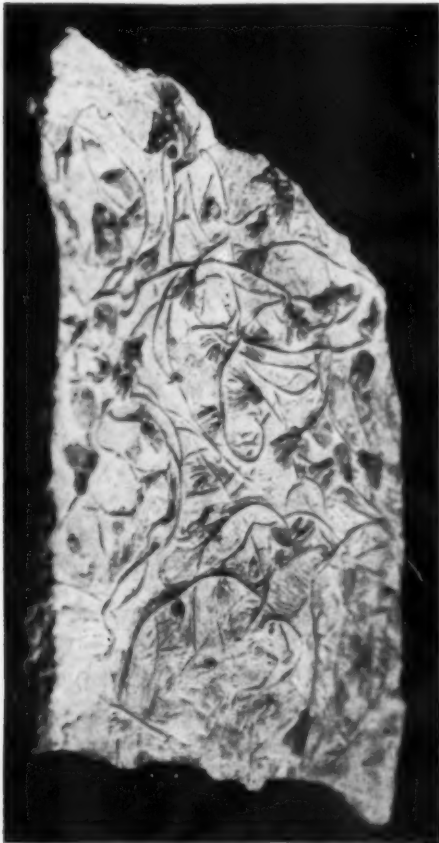
dences were found, and while the men were splitting the stone for Beane, he happened to glance at a limestone chunk on top of a thirty foot pile of rock. "My heart nearly jumped out of my mouth when I saw the starfish slab," says Beane. "If I hadn't been there that day, the rock would have gone to the crusher." Professor Schuchert of Yale later termed it the greatest find of fossil starfish ever made.

But at first Beane could hardly believe what he had discovered. With great difficulty he slid the rock off the pile of rubble and onto skids. Assisted by several men, it took Beane two days to get the slab home. He placed it against the apple tree in the back yard and worked for the next twenty-six years, off and on, cleaning and preparing the stone for exhibit.

Fossil starfish were so rare that when Beane wrote Professor A. O. Thomas (now deceased) of the S. U. I. geology department, Dr. Thomas quickly drove up to Le Grand to see for himself. As soon as Beane showed him the stone,

Thomas threw up his arms and exclaimed, "My God, Beane, where did you get that? That's worth more than the whole stone quarry!"

Suspecting that he had truly made a great find, Beane cautiously wrote Professor Schuchert of Yale, perhaps the country's leading paleontologist of the 1930's, and asked about starfish—what they were worth, and the general quality of the specimens available. Schuchert replied that starfish were very rare, and that Beane, if he were interested in securing them for his collection, would not be apt to purchase any in this country—perhaps, however, in Germany. He said that starfish were a museum's choicest pieces, generally worth from fifteen to one hundred dollars apiece. Amazed, Beane realized that on his slab



"Sea lilies." Denizens of an ancient ocean, some 300 million years ago. (Crinoids).

of stone he had 183 starfish. The Smithsonian Institute in Washington, D.C., is now negotiating to obtain the prized find for the National Museum.

Although the starfish discovery was the most dramatic moment in Beane's career, he maintains "it is always exciting when you find a fossil, for it has been hidden all these millions of years. You are bringing it to light, perhaps contributing to scientific knowledge." He takes great care in the preparation of specimens for exhibit. In the back yard of his Le Grand home, Beane and his son Louis have a work bench set up—equipped with a stone hammer, wire brush, dentist tools, and other implements. Because of the fine detail of the work, they prefer the daylight hours of spring, summer, and fall to artificial indoor light. The rocks remain in the back yard in all weather, for after all, as B. H. Beane points out, they've "been outdoors for millions of years."

Beane has furnished echinoderm fossils to about half the universities of the nation, as well as to the British Museum and other museums throughout the world. A stone slab crowded with crinoids may sell for as high as \$750. Beane has either met or been in correspondence with most of the country's leading paleontologists for the last half-century, and he has published several scientific articles describing his fossils. Perhaps his major scholarly contribution was a monograph on crinoids he did with Dr. Lauden twenty years ago.

Beane has frequently addressed science clubs, community service organizations, and has appeared on radio and television. Busloads of students from Iowa State College annually drive up to his Le Grand home to examine specimens, and then, with the students, Beane often goes out to the quarry. Regular field trips to Le Grand have been made by geology students from the Universities of Missouri and Iowa, and from Augustana, Simpson, and other colleges.

(Continued on page 166)

Along the Earthquake Belt

California's Fire Pot, Mount Lassen*

By BEN HUR WILSON

*Photos by R. E. Stinson, Anderson, California.

ARE THERE any active volcanoes within the limits of continental United States? This is a question we frequently hear asked. The answer is, yes. There is at least one,—and while it may not be considered actually active at the moment of our writing, Mount Lassen, located in Sacramento Valley, about 210 miles northeast of San Francisco, must be so classed. The first eruption of this famous volcano for which a date can be estimated, occurred at "Cinder Cone" in the Lassen Park district in California about 1694. While it is not generally conceded, we have it on good authority that on November 22nd, 1842 Mt. Saint Helens and on November 13th, 1843, Mt. Rainier, both in the State of Washington, were

in eruption, and Professor George Davidson of the U.S. Coast Survey in 1843 saw Mt. Baker, also in Washington, in eruption.

While there are now many active volcanoes existing in Central America and in Mexico, and also in Alaska, especially in the Aleutian Islands and the Peninsula, which are frequent erupters, there had actually been no volcanic activity observed in the United States in the present century until in May, 1914, when Mount Lassen suddenly erupted with unusual fury. The eruption began with geyserlike jets or clouds of white steam which gradually increased in violence until great bursts of dense black smoke, rising 2,000 feet in the air, forming



Vulcan's Face—Mt. Lassen 1915



Mount Lassen Eruption, 5/22, 1915

cauliflower shaped clouds occurred. These were followed by so-called pillars of fire which were visible down the Sacramento Valley for more than 100 miles. We are fortunate to be able to publish here, some rare pictures taken at the time of its greatest activity.

Lassen Peak has continued this activity, intermittently down to the present time, but for the most part these disturbances might be called only passive. Often the material ejected consists chiefly of gases; at other times cinders and bombs are hurled high in the air; and, again lava breaks through the sides of the crater and flows quietly down the slope.

The area encompassing the crater is now within the Mount Lassen National Park, where there are many other evidences of previous eruptions. About 150 years ago, it is estimated, there was a large lava flow, and somewhere in the neighborhood of 1700 years ago, a large cinder cone about 800 feet high was ejected.

A lengthy discussion on/of the tectonics of the Mount Lassen Volcano, it seems would be inappropriate here, as this would concern only those who are greatly interested in the subject of vulcanism. This is, however, a very fascinating problem, and we would advise anyone who has either the time or the inclination to be sure to read up on this subject at their leisure*.

Elsewhere in the United States, however, there is no evidence of any recent volcanic activity of importance, and there are indeed only a few localities where thermal springs of any consequence are present, the geysers of Yellowstone National Park being, of course, the best known. This is, to be sure, a very fortunate circumstance, as uneasy "rests the head" of people residing in regions where the threat of extreme vulcanism is constantly present. It should be pointed out however, that where great volcanic ac-

tivity has once occurred, there is always the possibility of its recurrence, even perhaps after hundreds of thousands or even millions of years may have elapsed, and in our own Pacific Northwest there is, indeed, just such a place.

Here, where now stand many great peaceful cities, and where many thousands of people are engaged in profitable farming, mining and timber enterprises, was once the scene of one of the greatest volcanic catastrophies the world has witnessed since Cambrian times. Here, in earlier days the earth's crust often gaped open in mighty craters and let huge floods of lava overspread the surface. The ocean floor often received this flood of melted rock. In many places the same chimney opened again and again, each time spreading a new layer of lava on top of the old, so that the surface now has several lava sheets overlying intervening aqueous strata.

If the previously hardened lava sheets proved a barrier to the new rising tide of molten lava in the chimney, it was often forced out into sheets between these layers of aqueous rocks and wherever the heated material came into contact with these rocks it transformed them, for a foot or more, into crystalline, metamorphic rocks. It is here that rockhounds are advised to go in search of gemstones and other rare minerals for their collections. These locations known as zones of "contact" metamorphism often prove to be excellent hunting grounds.

A chimney of lava is called a neck. In mountainous countries dikes are also common. Sometimes small, they may also be hundreds of feet across, often standing high above the softer strata, which rains have worn and eroded away. Dikes often look like ruined walls, and may sometimes be traced for many miles where they have been overturned in the mountain-making process. One such great dike in the Andes extends for hundreds of miles.

The great lava flows of the Northwest States happened when the Coast Range

*Consult Index — "Volcanoes as Landscape Forms," by Cotten; John Wiley & Sons, Inc. New York.



Mt. Lassen Eruption, 1915
From Red Bluff, California

was born. Along the border of the Pacific Ocean vast sedimentary deposits had accumulated during the Cretaceous and Tertiary Periods. Then the mighty upheaval came, and the mountain ridge rose at the end of the Miocene epoch and stretched itself for hundreds of miles through the region which is now the coast of California and Oregon. Great fissures opened in the folded crust, and floods of lava overspread an area of 150,000 square miles.

A dozen dead craters show today where those immense volcanic chimneys were. The most recently extinct of these volcanoes in this vast area is Mount Hood, Mount Rainier, Mount Shasta all of which are too well known to call for further description. Farther south San Francisco Mountain in Arizona, and Mount Taylor in western New Mexico are also of about the same period. Jets of steam and gas still issue from small holes called fumaroles in the snow-clad summit of Mount Rainier, showing that its activity has not yet entirely disappeared. This may give the people residing in this part of the



Mt. Lassen Eruption—Taken from
Anderson—50 miles distant

country something to think about.

The depth of the lava-beds is well shown where the Columbia River has worn its channel through it. Walls of lava three thousand feet in thickness rise on each side of the river. They are made of columns of basalt, fitted together, like cells of a honeycomb, and jointed, forming stone blocks laid one upon another. The lava shrinking on cooling forms prisms. In Ireland, the Giants' Causeway and the "Devil's Tower" in Wyoming are famous examples of basaltic formation. In Oregon, the walls of the Des Chutes River show thirty lava layers, each made of vertical basalt columns. The palisades of the Hudson, Mt. Tom, and Mt. Holyoke are examples on the eastern side of the continent of basaltic rocks made by lava floods.

Northern California, northwestern Nevada, and large parts of Idaho, Montana, Oregon, and Washington are included in the basin filled with lava at the time of the great overflow, which extended far into British Columbia. It is probable that here and there certain

chimneys continued to discharge up until comparatively recent times.

Quite a different history has the great Deccan lava-field of India, which covers even a larger area than the basin of our Northwest, and is in places more than a mile in depth. It has no volcanoes, nor signs of any ever having existed. The lava floods alone overspread the region, which shows no puny "follow-up system" of scattered craters, intermittently in eruption.

Today Mount Etna spews hot sand. Fuego hurls a pall of ash over central Guatemala, and severe tremors rock San Francisco, the Aleutians, and Manchuria.

Shaken spectators of nature's fireworks might well wonder whether Vulcan is working overtime this year. Traditional hot spots, such as Fuego, have been re-kindled. However, statisticians say the situation seems to be normal—if not quiet—along the earth's notorious "Belts of Fire."

The Coast and Geodetic Survey, which keeps one ear to the trembling earth, has listed only 266 major earthquakes in 1957 as compared to 299 during the same period last year.

As for volcanoes, our planet is—quite literally—letting off a normal amount of steam. No more than a handful of the earth's 450 active volcanoes usually speak at once.

The major earthquake-volcano belt runs around the edge of the Pacific Ocean, the National Geographic Society says; "Significantly, there is the juxtaposition of lofty, rugged peaks and extreme ocean depths. The mountain chains are still growing."

The second trouble zone extends from the West Indies across the Atlantic and Mediterranean to the Himalayas and the East Indies. The Himalayas and mountains of the Indies also are rising newcomers.

Both earthquakes and volcanoes are intimately connected with mountain-making, for the earth, like an adolescent,

is still undergoing the torment of growing pains. It is restless, unpredictable. Tremors and volcanoes are safety valves to ease pent-up tension and pressure.

Tremors occur at "faults" or deep fractures in the earth's crust when one rock mass slips against another. One such fault, the San Andreas, cuts 600 miles across California and triggered the 1906 disaster, as well as more recent quakes in the San Francisco area.

Most faults lie beneath the sea; thus are harmless. But a tremendous shift may start a tidal wave. On March 9, (1958), the same day that a major quake shook the Aleutians, huge waves raced across the Pacific and battered the northern shores of the Hawaiian Islands.

Volcanoes free gases, vapor, lava or solid fragments from magma, a combination of gases and molten stone. Magma constantly squirms and pushes against pockets some 30 miles beneath the earth's surface, trying to escape through faults. Hot lava is its froth, similar to foam on beer.

As yet, scientists have not determined the source of this internal heat. Various theories attribute it to pressure, chemical changes in rocks, and radioactivity of uranium and thorium. The activity alternates between periods of storm and calm.

Despite their wanton ways, volcanoes serve mankind. Their ashes enrich soil; their dust produces brilliant sunsets. Diamonds and minerals are found in volcanic deposits. Volcanoes may be trapped for heat and power. And thus we learn that all great forces of nature such as floods, winds, and volcanoes today play their part in the economy of our living earth which sustains all living things, even Man himself.

READ:—Is "Boise Sitting on a Volcano?" September 1953 issue of EARTH SCIENCE. 35c postpaid on request. (Send Coins)

Report of 1959 Midwest Convention

By FRED RENTZEL, Convention Chairman

THE Nineteenth Annual Convention of the MFW has 'come and gone.' This event was held June 18-21st. "Would you do it again?", "Was the show a success?" These and other questions are 'at hand.' Let me tell you about it, and then you may judge for yourself. In beauty—OVERWHELMING! To persons unfamiliar with the world of rocks, minerals and gemstones—ENLIGHTENING. Displayed were some of the finest collections in the country. In value of material displayed (A million dollars?). Possibly—VALUE UNKNOWN. A SPLENDID SUCCESS . . . Though tired, most graciously admit IT WAS GREAT: a lot of work but rewarding.

Upon driving into the grounds to your destination, you observe two large buildings adjoined; and a large parking area, to accommodate your first need. As you enter the main door, the two large show windows are "striking" and very fitting. One, a panoramic desert scene with ore mines, a wagon train, and even cacti which deck the desert in the western region. The other, a large display of

minerals collected in travels, and utensils used by "rockhounds."

After a reception at the Registry desk, you start your 'look-see,' and 45,000 sq. ft. is a lot of looking. An isle of greenery invites you to a resting place if you should tire. In the middle of the room, in view, a large pyramid of Ohio mineral specimens and cutting material. Including a map of Ohio made largely from the Jasp-Agate of Flint Ridge. All of the counties made individually, from Ohio material, by members of the host organization, the Miami Valley Mineral and Gem Club, of Fairborn, Ohio.

Then, into the Annex, where you view Special Exhibits.—A pleasant SURPRISE! Among the more than twenty cases, the awe-inspiring exhibit of beads from the Smithsonian Institute of Washington, D.C. (25 strands of beads, valued at \$100 per strand), for your splendor and admiration; displays from the Ohio Museum of Natural History; and the Ohio Geological Survey; Boy Scout Troops of Columbus, an outstanding display; and Individual displays that were astounding



Club exhibits in the Grand Hall, showing the ESCONI display case on the right, and the Michigan Mineralogical Society on the left of the picture.

in design, unique, and attractive. Highly polished gems (sparkling and colorful), and valuable mineral and fossil collections were on exhibition. Also machinery, such as cutting, grinding and polishing wheels, indispensable in cutting and polishing the gem stones. Many of the exhibits were private collections. Also in the room was the Industrial display—elaborate machinery—used for demonstrating the various processes essential for gem-making, kept in operation by the host club. Thus, familiarizing both layman and craftsman with the methods of bringing out the beauty of what otherwise would be just plain rock. Showing how faceting is done, how to make cabochons, and tumble stones, from the rough chunk of material as formed in the earth.

You now enter the Main room where displayed are spacious club exhibits. Around the wall, approximately thirty-five dealers from across the nation, coast-to-coast, and Canada.

More than one-hundred-twenty-five exhibits at the convention show of the most beautiful, well-arranged and encased, displays by our societies, individual and Junior members of the Federation. Competition inevitable, portraying some fabulous sights for you to view.

Especially planned programs had been provided for additional entertainment. These were set-up in a divided section in the first building entered. In the Program room a loud-speaker system had been installed for the convenience of speakers. Such distinguished programs as these, were relished by the visitors and club members alike:

"Rock Hunting—U.S.A."—basic steps necessary for first class cutting and polishing.

"Southwestern Archeology"—color pictures and talks.

"V-Lock"—unlimited original design in lapidary.

"Gems of the Bible"—illustrated by slides of Biblical gems as well as a display of collected gems.

"Faceting"—essential steps in faceting gem stones.

Movies also shown at intervals.

The Field Trips were a great success. Approximately one-hundred collectors went to Flint Ridge to find jasper and agatized pieces of what is known as flint, used by the Indians for making arrows, knives and other implements. Some went to Camden to search for Sea Fossils. Some fifteen autos enroute, paused for the Geode Hunt and Gold Panning trip in



The Swap Table, continuously functioning. 'Rockhounds' just like swapping minerals. 'Pebble Pups,' too, are learning how to exchange material.

Indiana, at the close of the convention.

Rockhounds from all over the United States attended the show. Friendships were renewed and new acquaintances made. There are 20,000 (plus) rockhounds throughout, and the hobby (second only to photography) is the fastest growing in the country.

We must say adieu to the **FINEST SHOW EVER**.

New fields may stem from our mineralogical and geological interests as more people become enthusiastic, and who can predict future development.

CONVENTION HIGHLIGHTS

The Midwest Federation of Mineralogical and Geological Societies' Convention Show was opened officially with Ribbon Cutting rites, convention officials, and other state and local celebrities attending and taking part in the ceremonies.

Honored by a Breakfast, the Editors' of Club publications dismissed friendly association to further enjoy Convention plans.—The Editors' Breakfast had been especially designed for twenty-one editors who participated in the "Bulletins-on-Parade" contest. Introduction in relation to club or society affiliated. A "Word-of-Welcome." A speech on the topic "Editor Tips." The speaker, Mr. Johnny Jones of the Columbus Dispatch Newspaper, presented the awards (first, second, and honorable mention) and made commentation on the publications as afforded by the Judges at the Dispatch—Ohio's

Greatest Newspaper. The host club publication, "Chip and Lick," and a report of convention awards were accessible to everyone.

An array of "BANQUET" celebrity . . . opened with orchestral music. Special entertainment, concluding with "Cordilleran Horizons" portrayed with exquisite pictures, together with commentaries, by Mr. and Mrs. Edwin Goff Cooke, of Chicago.

Among other notables attending were B. H. Beane, the "Grand Old Man" of paleontology, noted for his famous work with crinoids, of Le Grand, Iowa, and Mr. and Mrs. John McLucky of Coal City, Illinois, whose coal measure fossil collection is one of the most outstanding in the country.

"Bill" Bingham, W. H. de Neui, and Hazen Perry, President of the American Federation, all of the "Twin Cities," were also distinguished guests.

The Cafeteria and Snack Bar service was utilized from the beginning to the closing of the convention, providing full meals or just snacks.

A silent Auction enriched the collections of some. An Auction also took place at the farm of the late Dr. J. R. Hudson, on Monday following the show, of thousands of pounds of minerals and equipment.

A large Swap Table was in continuous operation, affording much pleasure to the club hobbyists, associate, and friend, as well as visitors. As, truly 'rockhounds' enjoy and value, the exchange of material.

An Old-Timers get-together proffered friendship. Two MFW Exclusive meetings were held for direction of incurred business. Officers for the new fiscal year 1959-1960 were named.



Working display, manned by host club, Miami Valley Mineral & Gem Club, Inc. In continuous operation to show visitors and craftsmen alike, the process for making gems.

MIDWEST ON THE BALL: The 19th annual business meeting of the Midwest Federation held June 20th, in connection with the Springfield (Ohio) convention, conducted by retiring president LaFayette Funk, was both inspirational and revealing. Many encouraging reports were given by the Divisional Chairmen, and Regional Vice Presidents showing the Federation to be in a very healthful and prosperous condition.

Organized in 1941, with three affiliated Clubs, there are now nearly eighty cooperating societies well distributed throughout 13 Midwestern States included in the region. For administrative purposes, this vast territory has been divided into four sub-regional areas, designated as the Southwestern, Central, Northern and Eastern, each having a sub-regional vice president serving as a coordinator of various sub-regional activities.

One important constitutional change was approved by the delegates at the Springfield meeting, providing for a Federation sponsored "Rockrama" Show annually in each sub-regional division excepting the one which shall be entertaining the big annual Midwest Show and Convention. These "Rockramas" do not prohibit or interfere in any manner with such local club shows as may be put on or sponsored by individual clubs as may wish to do so.

New officers elected for the year 1959-60 were: President, Robert Markert, 107 W. Ridge, Ishpeming, Michigan; and Vice president, Harry H. Sprague, 1130 Swan Creek Road, Saginaw, Michigan; the remaining official staff were continued in office for another year. The 20th Annual Convention of the Federation will be held over the 4th of July

weekend at Ishpeming, this being the Field trip and Collecting outing designated for each third year, with greatly reduced or minimum emphasis being placed upon exhibits and dealer activities. The 1961 Convention and Show will be held at Saginaw, Michigan, many of the arrangements for exhibit halls and entertainment having been already made. The 1962 Convention will be held in the Memorial Auditorium at Des Moines, Iowa, at which time the Midwest Federation is scheduled to entertain the American Federation.

* * * *

OUR HATS ARE OFF to the newly formed Columbus (Ohio) Rock and Mineral Society, recently affiliated with the Midwest Federation. Robert M. Maher, their president, writes that their society "grew out of a loosely knit club that was organized about a year ago as a result of the Rock Hound Scout Troop 26 of Columbus, and interest has grown to the point where we are now a full fledged Society, with a large waiting list at the present time."

This club has distinguished itself as being the first club among the more than eighty in the Midwest Federation to incorporate a subscription to the **EARTH SCIENCE** magazine, the official organ of the Federation, into its membership dues, and incidentally when writing, Mr. Maher enclosed a check in his letter for their first year's subscriptions.

We are thanking Mr. Maher and his fine new society for their thoughtfulness, and hope that this will be only the beginning of a series of like announcements coming in from many other clubs in the Federation.



One of the thirty-five attractive displays of Lapidary Equipment and Mineral Supply Dealers present at the show.

Book Reviews

THE EVOLUTION OF NORTH AMERICA. Philip B. King, Principal Geologist, U. S. Geological Survey. Princeton University Press. 1959. \$7.50.

The story of the continent of North America from its earliest beginning through geologic time is set forth in this book by one of America's leading structural geologists. The latest results of geological, geophysical, and geochemical investigations have been brought together and set forth in a most interesting and readable style. Dr. King has treated each region separately, and has illustrated principles or significant stages of continental evolution.

The contents of the book comprise information recently given in a one-semester 28-lecture series by the author to an undergraduate audience at the University of California. Restrictions were imposed on the use of information and data of a highly technical nature, hence the layman need not hesitate to attack it.

In addition to chapters on the Canadian Shield, the Interior Lowlands, the Appalachians, the Cordilleran system of the West, etc., the author devotes an interesting section to lands and seas south of the continent, including the Caribbean Sea floor, the Puerto Rico trench, the Greater and Lesser Antilles, and deep-focus earthquakes. The book is abundantly illustrated. A large map at the end shows shields, orogenic belts, post-orogenic, and oceanic features.

WATER FACTS FOR THE NATION'S FUTURE. Walter B. Langbein and Walliam G. Hoyt. Ronald Press Co. 1959. 288 pp. Sponsored by the Conservation Foundation. \$5.00.

Management of the water resources of this country is dependent upon statistics. This book is unique in that it undertakes to appraise the statistical programs set up by various agencies concerned with water. Part I is entitled Gathering Data; Part II Data in Action. The authors are in a particularly favorable position to evaluate data programs because of their long association with the U.S. Geological Survey.

We spend \$80 million a year in mapping and gathering water data. Yet we do not have the statistical material necessary for long-range planning and wise use of our water resources. One reason is that a major share of the data is tied to specific projects. Even more important is the fact that no or little money is left for analysis and interpretation of data after needed observations are made. Billions are spent on flood control but

it is not possible to know which of the various methods of flood damage abatement will be most effective in given circumstances because there simply are not adequate data available on their performance. After a project is installed, the agency in charge does not collect data systematically which will show whether or not the project actually operates as it was claimed to in the planning stages.

The authors suggest, as practical helps, wider publication and distribution of handbooks giving modern hydroelectric techniques for solving problems in sewage systems, storm drains, and water supplies. A brighter side of the picture is that wider use could be made, particularly by towns, cities, and industrial water consumers, of data that *are* available.

Appendices include Publication Series containing Hydroelectric and Hydroclimatic Data, Expenditures for Collecting Basic Data, Glossary, Bibliography, and Index.

GROUND WATER HYDROLOGY. David K. Todd. John Wiley & Sons, Inc. 1959. 336 pp. \$10.75.

Professor Todd (University of California, Berkeley) defines his subject as "the science of the occurrence, distribution, and movement of water below the surface of the earth." Ground water is distinguished from surface water, i.e. water in our lakes and streams. The author estimates that the largest available source of fresh water lies underground.

The United States uses over 46 billion gallons of ground water each day. Although this is only 19% of our total use of both ground and surface water, ground water is increasing in importance as irrigation, industry, and other uses draw more and more heavily on all available supplies. The three states of California, Texas, and Arizona use more than half of the total U.S. withdrawals of ground water. Much of the advance in ground water hydrology has been carried on in the West, notably California. Professor Todd believes that maximum water development in the West can only be attained by conjunctive utilization of surface and ground water reservoirs. Surface storage should be sufficient to cover annual requirements while ground water reservoirs should protect us from prolonged cycles of sub-normal precipitation. Artificial re-charging of ground water is carried out by spreading of water in ponds or basins, in pits, etc. Recharge with sewage plant effluents is the subject of considerable research.

This is a book for the engineer as well as the interested layman. Equations and graphs

are used to clarify the principles of ground water flow, hydraulics, etc. Some of the fascinating by-products of research in the field of ground water discussed by the author are the effect of "earth tides" and of earthquakes on the level of ground water in wells. Sea water intrusion in overpumped coastal areas is also discussed. The scope of the book is expanded by a chapter on legal aspects of ground water. Generous lists of references follow each chapter. Professor Todd has made a scholarly contribution to the technological literature on one of our basic resources.

1001 QUESTIONS ANSWERED ABOUT THE MINERAL KINGDOM. Richard M. Pearl, Associate Professor of Geology, Colorado College. Dodd, Mead & Co. 1959. \$6.00.

The publishers made a wise selection in choosing Dr. Pearl to author the mineral book in their 1001 Question series. He has wide knowledge in his subject from which to channel information to his readers.

The question and answer technique permits one to take his learning in bites, so to speak. Of the sixteen chapters, the first ten are devoted to rocks (igneous, sedimentary, metamorphic), meteorites, radioactive minerals, and metals (base, rare, ferrous, etc.). The balance cover gems, industrial materials, fossil fuels, mining and milling, water resources, and collecting. An index helps to spot the specific information desired. Following are examples of the questions Dr. Pearl answers:

What are bitterns and what is their source?

What are tektites and what is their composition?

Is mercury mining still a dangerous health hazard?

What is diatomaceous earth? What is its common use?

Which one of the sandstones is noted for its unusual high purity of quartz?

Drawings and photographs illustrate the book. A bibliography and comprehensive index are included.

NEWS ITEMS

"15th CHICAGO INTERNATIONAL EXHIBITION OF NATURE PHOTOGRAPHY," co-sponsor Nature Camera Club of Chicago and Chicago Natural History Museum. Deadline: January 18, 1960. Exhibit: February 5-26, 1960. Silver medals and ribbon awards. Entry forms from Mr. H. J. Johnson, 2134 W. Concord Place, Chicago 47, Illinois.

An especially prepared GEOSCIENCE FIELD & LABORATORY KIT, known as "GEO-KIT," has been prepared by the Geoscience Instruments Corporation, 425 Park Ave., 15th

Floor, New York, New York. It is a custom built item of tan leather with zipper. All instruments are held firmly in place within the roll-type kit. For further information see their ad on page 169.

(Continued from page 156)

The specimens which Beane has collected are only a fraction of what he believes the rock crusher destroyed. "There are men who have worked at the quarry all of their lives who've never found a crinoid, although many of them have been on the look-out for me." The area, about fifty feet across where the finds were made, contained an estimated quarter of a million individual sea lilies—most of them lost.

Altogether, about forty species of echinoderms have been found in the Le Grand quarry. It has now been six years since any new fossils have been discovered there, and perhaps this rich site, for nearly a century one of the world's best areas for certain prehistoric sea animals, may have come to the end of its scientific prominence.

"It is doubtful if anything will ever be opened up here again," says Beane, pointing out that the quarry now has a sixty-five foot overlay which makes it too expensive to get limestone out. As a result, the Concrete Materials company, which owns the quarry, has moved operations across the Iowa River, away from the site of the big discoveries. The hundreds of specimens that Beane has prepared will probably greatly increase in value and scientific importance as the source of future supply ends.

S. U. I. Geologist Miller feels that the crinoid experts, Professors Thomas and M. A. Stainbrook, thoroughly explored Iowa when they were alive, "and there is little likelihood of another extensive find of crinoids being made in the state. Therefore, our reputation will most probably have to rest on the renowned work already done."

SEE COVER PHOTO

(Continued from page 151)

MICHIGAN MINERALOGICAL SOCIETY reports that the Borin Brothers quarry at Scofield, Michigan is now closed to collectors. The owners have no quarrel with sincere mineral collectors and written permission will be granted to such. At present the company is not blasting the top levels along the north and west walls where most of the sulphur and celestite have been found.

MINNESOTA MINERAL CLUB reports that Vaner Tangborn of Guthrie, Minnesota has presented the Smithsonian Institution with its first specimen of Binghamite. This is a colorful semi-precious stone that is native to Minnesota and apparently found no where else in the world. It is formed by a petrification-like process on iron ore and is named for William Bingham, past president of the Midwest Federation and a gemologist, who first identified it as a new mineral.

CHICAGO ROCKS AND MINERALS SOCIETY recently held a round table discussion, headed by Mrs. Marie Holtz, on fluörite. Free specimens of the mineral, suitable for a hardness scale kit, were passed out. Afterwards the society viewed the Linde A company's beautiful movie on "Synthetic Gems."

OTHER SOCIETIES

SAN DIEGO LAPIDARY SOCIETY is now holding meetings in its own club house, a beautiful seafoam green building that was built with its members donations of labor and money. After the meetings, the members enjoy refreshments prepared in the club house's modern kitchen.

MIAMI MINERAL AND GEM SOCIETY reports that Switzerland has issued a series of five stamps featuring rocks, minerals and fossils. The series include multicolored lithographs of agate, tourmaline crystals, amethyst crystals, and a fossil skeleton of a salamander. Also, France is commemorating the 175th anniversary of the Mining School of France with a multicolored stamp.

In the interest of rockhounds who are also stamp collectors, MM&GS uses only commemorative stamps when it mails its official publication, "Chips & Facets."

TOPEKA GEM AND MINERAL SOCIETY was shown two films, "Face of the Land" and "The Earth is Born" at its June meeting. The movies were prepared by *Life* magazine and deal with basic geology.

Recently several members of the society

visited the Great Salt Plains of Oklahoma to collect a variety of fine selenite crystals.

COLORADO MINERAL SOCIETY plans an exhibit in October, featuring the best material collected by its members on their summer field trips. In July the group visited the Fort Collins area to collect black tourmaline and the Gunnison area for pink tourmaline, lepidolite and beryl.

HIAWATHA GEM AND MINERAL CLUB recently heard W. J. Rodekoher of Topeka, Kas. give an illustrated talk on "Micromounts." During June the society visited three collecting areas near Topeka and were rewarded with some fine pyrite and fossil specimens.

RECOMMENDED READINGS

"A Mineral and Gem Pronouncing Vocabulary," by Mae Rentzel. June issue of *Chip and Lick*. This is the most complete list of its kind ever published in a club bulletin. It contains nearly 700 gem and mineral names.

"No Mystery in Quicksand," by Dr. Frank Fleener. June issue of *Trilobite*. The author relates his experiences with quicksand while working as a geologist in Oklahoma. He gives a scientific explanation of quicksand and explains that it is possible to float in it. If caught in quicksand, he advises, lay on your back, spreadeagle fashion, then roll over and over until you reach terra firma. It is suicidal, he adds, to try and wade out.

"10,000 Years Beneath Our Feet," by the Archeologists of the State of Illinois, January issue of the *Memphis Archaeological and Geological Society News Letter*. A good outline of Indian periods, beginning 10,000 years ago with the paleo-Indian period. It is well illustrated with drawings of artifacts from each period.

* * * *

ILLINOIS ARCHAEOLOGY: BULLETIN NO. 1, Published by the Illinois Archaeology Survey, 137 Davenport Hall, Urbana, Illinois. 62 pages. Price \$1.00. A noteworthy publication written by ten contributors, each one being an outstanding authority in his own respective field.

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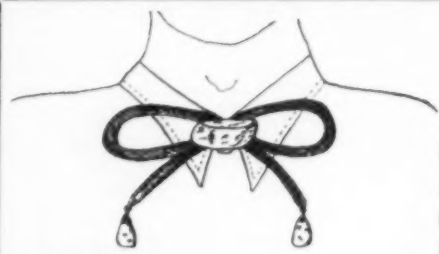
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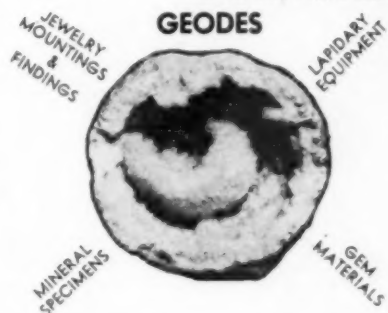
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*See Article "Rockrama's"—August '59 Issue Pg. 130.